

Naval Base San Diego Finds Creative Ways to Save Water

Efforts Include Artificial Turf & An Irrigation Water Audit

PERSONNEL FROM NAVAL Base San Diego (NBSD) has slashed water consumption through an ambitious plan that addresses water usage across the base.

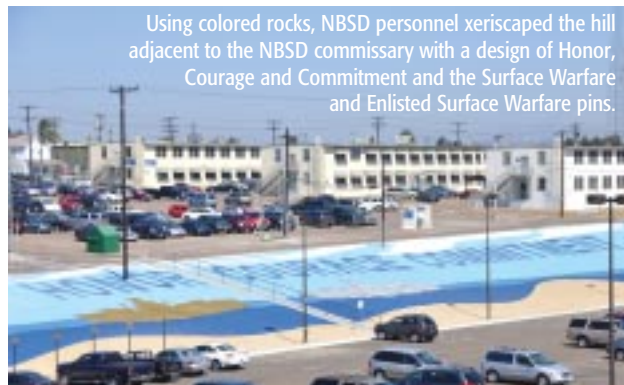
In the beginning of Fiscal Year 2008, Executive Order 13423 stated that federal agencies are required to reduce water consumption by two percent annually or a total of 16 percent by the end of fiscal year 2015. In an effort to meet and surpass this goal, NBSD personnel set astonishing goals for water reduction by the end of September 2009.

When the Executive Order was published in 2007, NBSD's baseline for water consumption was just under 230 million gallons. This figure included NBSD, located along Harbor Drive and 32nd street, the Broadway complex, including 1220 Pacific Highway, and the Admiral Baker Facilities in Mission Valley. In just one year, NBSD's consumption decreased to just under 204 million gallons, an 11.42 percent reduction. As of September 2009, total water usage was at 128,133,000 gallons, which was 26,867,000 gallons below the September 2009 target goal usage of 155,000,000 gallons.

Captain Rick Williamson, Commanding Officer of NBSD, knows that water resources in California are at a critical level, especially these days when San Diego County is in a Level 2 drought alert. "Efforts were put into place back in 2007 to start the



A combination of artificial turf and xeriscaping on NBSD helps conserve water and beautify the industrial area.



Using colored rocks, NBSD personnel xeriscaped the hill adjacent to the NBSD commissary with a design of Honor, Courage and Commitment and the Surface Warfare and Enlisted Surface Warfare pins.



Artificial turf and xeriscaping in front of Building 72 on NBSD.

For More Info

XERISCAPING INVOLVES THE growth and cultivation of drought-resistant vegetation. For more insights into the use of xeriscaping, see our article entitled, "Pearl Harbor Navy Exchange Employs Practical Landscape Design: Xeriscaping to Help Region Meet Water Reduction Mandates" in the spring 2009 issue of *Currents*. You can browse the *Currents* archive and subscribe to the magazine via the Naval Air Systems Command's environmental web site at www.enviro-navair.navy.mil/currents. Visit the magazine pages on Facebook and Twitter by searching for "US Navy Currents."





Drought-resistant landscaping techniques or xeriscaping, help saves water at NBSD.

conservation process. We had a great result last year of almost an 11.5 percent reduction and we want to continue to aggressively reduce our water footprint and save taxpayer dollars.”

Some of the creative initiatives completed by NBSD in 2008 include an artificial turf and xeriscape project, which is estimated to save 2.17 million gallons a year, and the installation of 104 waterless urinals with an anticipated savings of 2.8 million gallons annually. Additionally, the first phase of smart irrigation controllers and the replacement of showerheads in the barracks with 1.5 gallon/minute low-flow fixtures have saved an estimated 7.3 million gallons of water annually.

Another innovative project undertaken in 2008 was an irrigation water audit. Dennis Brazell, NBSD’s Resource Efficiency Manager, began to study irrigation needs and patterns base-wide. “We were trying to find unique ways to reduce water on NBSD. We knew irrigation was a major water consumer. In order to evaluate NBSD’s water usage and determine how to irrigate in the most efficient manner, we secured it and monitored it on a day-to-day basis for 18 days.” This project allowed NBSD to reset the watering schedule, reduce usage by 40 percent and save an estimated 16 million gallons of water and over \$80,000 dollars annually.

As of July 2009, NBSD has reduced its water irrigation usage by 34.3 percent from last year, saving over 15.5 million gallons of water, leading the irrigation reduction in the San Diego Metro area. This is a direct result of the water audit, the installation of irrigation controllers, artificial turf and xeriscaping.

Current water conservation initiatives on NBSD’s plate for 2009 include the second phase installation of smart irrigation controllers and the installation of one-pint low-flow urinals estimated to save 17.4 million gallons of water annually. The planned projects for 2010 through 2012 include eight artificial turf and xeriscape projects and washing machine upgrades to energy-efficient models, both saving over 2 million gallons of water a year.



Located on NBSD, this CalSense irrigation controller was installed as a part of the water conservation effort.

NBSD personnel continue to take the water reduction initiative seriously, and even with the successes the base has had so far, there is more to do. “We are doing a great job, but I know there is more we can do,” explains Williamson. “The water crisis isn’t going away anytime soon. As good stewards of the environment, we want to continue to lead the way and think of innovative ways to be green.” ♻️

Photos by Maile Baca

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NETWARCOM Cuts Travel Costs, Saves Environment

Sanctioned Vanpool Helps With Traffic Mitigation

DEPARTMENT OF THE Navy (DoN) employees at Naval Network Warfare Command (NETWARCOM) made the choice to save money by participating in an innovative program that can reduce traffic and help the environment.

The Transportation Incentive Program (TIP) offers active-duty Sailors, Marines and DoN civilian employees vouchers to purchase monthly public transportation passes. The vouchers can also be used toward other transportation services, such as vanpools or commuter trains.

"I made the initial inquiry into TIP and the other five members saw it as a 'no brainer'," said Karen Barnett, management analyst with NETWARCOM's Force Manpower and Personnel directorate. "Saving money, helping with traffic mitigation and cutting down on environmental pollution are the biggest benefits of the program."

Barnett was concerned at first as to whether or not she could find enough people to join her vanpool, but once she leased the seven-passenger van from Hampton Roads Transportation (HRT), she was able to fill it up within days.

Barnett said the process was fairly simple. She completed a TIP form and rented a van through her supply department, the Commanding Officer of Naval Amphibious Base Little Creek, Naval Base Norfolk, and then the Department of Transportation in Washington.

"I think most people feel a bit apprehensive about starting such a program, because of pick-up and drop-off points, but once they find out that they receive a reimbursement check from the government (up to \$115 a month per person) the savings sink in."

Ruth Fox, a paralegal in NETWARCOM's Force Judge Advocate's office, said she saves money on gas and keeps the mileage down on her car. "It takes a little longer to get to work, but I think it's worth it," said Fox.

TIP has a few strings attached, such as:

- Riders must travel 11 out of 21 consecutive workdays to receive their checks.
- Reimbursement checks are paid quarterly and total \$345.
- There can be no more than a \$250 "total" surplus in the account (which is set up by the leaser to handle expenses).



Six NETWARCOM employees are participants in the TIP in the Hampton Roads area.
MC1(SW/AW) Corey T. Lewis

"We put 87 miles a day on the van," said Barnett. "Each of us has saved so much with TIP—from the leasing costs, which include maintenance and insurance, to gasoline and wear and tear on our personal vehicles. Now our personal vehicles are only used for personal trips."

Her present costs include \$237 per month to lease the van, an 11 cent per mile fee, plus the cost of gas.

Barnett gets on the road at 5:50 a.m. from Moyock, NC, and picks up her last passenger in the Greenbrier area of Chesapeake, VA, arriving at work by 7 a.m. She completes a daily log, which includes mileage, time on the road, gas receipts and a record of passengers. The group departs work at around 3:30 p.m. and Barnett pulls up to her front door at around 4:30 p.m., repeating the log entries at the end of her day.

The pick-up and drop-off points are similar to that of a school bus—within walking distance of one's home. And should the primary driver be off, there are alternates. "If for any reason—be it an emergency or someone having to

stay late at work—there are alternate means of transportation available,” explained Barnett.

HRT has a “Guaranteed Ride” program to prevent anyone from being stranded. Up to four times per month, participants can call for a ride for a charge of three dollars. And, if this is not enough of an incentive to use TIP, all participants can earn gift cards through NuRide and affiliated businesses. (Note: NuRide is the nation’s first rideshare network that rewards riders for sharing rides. For more information, visit www.nuride.com.)

"In the end, it's all about commitment to the program," concluded Barnett. "You only get out of it what you put into it. Maximum participation in TIP earns maximum rewards in savings."

Different variations of TIP are available in all 50 states, Guam, Puerto Rico and the U.S. Virgin Islands. The program began as part of the Transportation Equity Act of the 21st Century.

To sign up for this program, contact a local base representative or go online at www.fmo.navy.mil/services/tip/tip.htm to complete and submit a TIP application form. The enrollment process takes about one month. 🌱

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Currents Web Page

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Decision Tree Helps Aircraft Maintainers Pick the Right Compound

Flow Chart for Corrosion Preventative Compounds Now Available in Aircraft Maintenance Manual

ENGINEERS FROM THE Naval Air Systems Command (NAVAIR) have developed a process flow chart—called the “CPC Decision Tree”—to be used as a reference guide to help aircraft maintainers identify and select the right Corrosion Preventative Compound (CPC) for a specific purpose.

It is very important that aircraft maintainers use CPCs to protect the metal in aircraft. There are thousands of CPCs to choose from, each serving a unique purpose. Due to the environment in which the Navy and Marine Corps operate, CPCs are extremely important in keeping the aircraft fleet ready for tasking.

The CPC Decision Tree is an interactive flow chart that requires the user to know and be familiar with the function of the part/component. Then, depending on the functionality, the flow chart recommends a CPC for a particular application. The CPC Decision Tree was implemented via

Interim Rapid Action Change #1 to the NAVAIR 01-1A-509-2 Aircraft Cleaning and Corrosion Control Manual (the “509 manual”) in October 2007.

Aviation Electrician’s Mate Chief Raybourn Nutter from Fleet Training explained, “Often aircraft manuals will direct an aircraft maintainer to ‘apply CPCs’ without specifying a particular product. The CPC Decision Tree is a simple and easy-to-use tool that helps the maintainer to quickly determine the correct CPC to apply in these situations.”

“The CPC Decision Tree was developed to be a quick reference to help the maintainer determine the proper CPC when no specific CPC is called out. The culture of using more CPC will start to change as more attention is placed on them, and that culture change will help prolong the life of the aircraft,” said Donald Beasley, Senior Materials Technologist at Navmar Applied Sciences Corporation.

CPCs are used to preserve and protect metal aircraft parts against corrosion. These materials can prevent new corrosion from forming as well as suppress corrosion areas where the original protective coating has degraded. Also, they are a relatively quick and inexpensive way of protecting against corrosive environments. CPCs function by preventing corrosive materials from contacting and corroding bare metal surfaces. Many of these compounds are also able to displace

BE PART OF OUR SUMMER ISSUE

Submissions Are Due by 23 April

We’re already planning our summer 2010 issue. And you can be a part of it! If you have a story that you want us to consider, you need to submit your final text and images by 23 April 2010.

The power of your experiences is even greater when you share them with our readers.

Your chances of being published in *Currents* are dramatically increased if you follow our article template. Simply request this easy-to-use template by sending an email to Bruce McCaffrey, our Managing Editor, at brucemccaffrey@sbcbglobal.net. Bruce is available at 773-376-6200 if you have any questions or would like to discuss your story ideas.

We look forward to reading your stories about all the great work you’re doing as the Navy’s stewards of the environment.

Currents Deadlines

Summer 2010 Issue: Friday, 23 April 2010
Fall 2010 Issue: Friday, 23 July 2010
Winter 2011 Issue: Friday, 22 October 2010
Spring 2011 Issue: Friday, 21 January 2011

You can also refer to your *Currents* calendar for reminders about these deadlines.



water and other contaminants, and some provide lubrication as well as corrosion protection. Thicker CPCs provide the best corrosion protection, are longer lasting, but are more difficult to remove. Thinner materials provide some lubrication and do not crack, chip, or peel but must be removed and replaced regularly to provide continuing protection.

The aircraft industry has used CPCs for many years as a means of protecting metallic surfaces against corrosion, thus extending the life of the aircraft structure. CPC treatments provide an extra layer of protection and are often recommended in maintenance manuals as a way to help prevent the onset of corrosion in specific areas of the aircraft. Corrosion prevention and control is a regular part of the scheduled maintenance cycle, occurs during unscheduled maintenance and is used to stop corrosion that has already begun.

“Corrosion control improves operational readiness and minimizes costly repairs,” said Louise Nicoloff, Senior Materials Engineer at NAVAIR North Island and the technical point of contact for the 509 manual.


Corrosion prone areas of aircraft include fasteners, two connecting metal surfaces, crevices, flat and slat recesses, wing fold joints, hinges, relief tube areas, water entrapment areas, bilge areas and electrical connectors. CPCs are effective only if no moisture, dirt or active corrosion is present. Therefore, the surface must be thoroughly clean and dry before applying the material. Because of their temporary nature, CPCs must be regularly removed and reapplied to provide continuing corrosion protection. Refer to the 509 manual for recommended time intervals for interior and exterior outdoor CPC application.

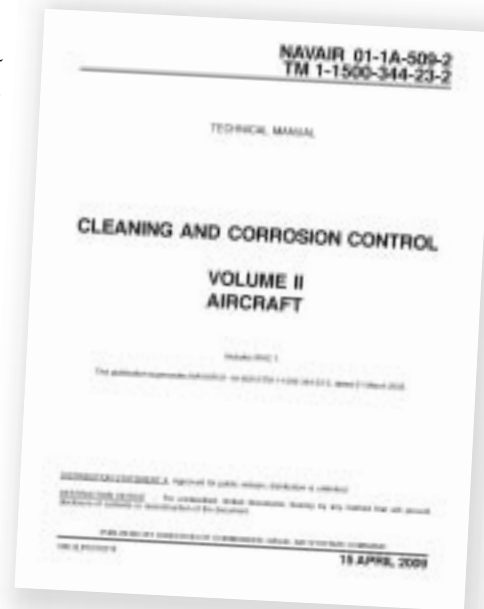
CPCs are separated into two categories: water displacing and non-water displacing materials. Water displacing CPCs can be used to remove water, sea water, or other electrolytes present on metal surfaces, leaving behind a corrosion inhibiting film to provide corrosion protection. They are usually very thin coatings and are clear or translucent. MIL-PRF-81309, MIL-DTL-85054 and MIL-PRF-32033 are examples of water displacing CPCs that have been qualified to the appropriate military specification. Most water displacing compounds (except MIL-DTL-85054) are soft, oily compounds which cannot provide long term protection outdoors or in areas that are frequently handled. These CPCs are able to penetrate into cracks, crevices, voids in faying edges, around fastener heads and into hinges.

Non-water displacing CPCs may be used on dried surfaces or on surfaces which have been first treated with a water

displacing CPC. MIL-PRF-16173 Grades 1, 2 and 4 are examples of non-water displacing CPCs. They are heavier oils or greases which provide long term corrosion protection. These CPCs provide thicker coatings and are light brown to very dark brown in color with a tack-free, waxy, greasy appearance. They provide good corrosion protection in areas where large amounts of water collect and during long term storage.

Application of CPCs is as easy as brushing, dipping, fogging, and spraying. The area of application, viscosity of the material and conditions under which they need to be applied are factors that determine which method of application is most suitable. Low viscosity materials are best applied by spraying or fogging, whereas high viscosity materials are more suited for brushing or dipping. Spraying with aerosol cans is convenient and the most popular method of applying CPCs. The spraying method is very effective for application to large areas and where confinement is not a problem. Most of the recommended CPC materials are available in the aerosol can unit of issue.

The CPC Decision Tree is found in chapter 8 of the 509 manual and reproduced on the following pages for your convenience. The manual can be accessed through the Naval Air Technical Data and Engineering Service Command web site at <https://www.natec.navy.mil> using a Common Access Card and password. 



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CPC Decision Tree

